Math 304

Exam 1 Study Guide –

The format of test on Thursday, 9/20, will be similar to your first quiz in this course:

- Most of the questions are formatted requesting you to solve open ended problems
- You will have 65 min. to complete the test so pace yourself so that you can do your best
- There will be several problems requiring you to write an explanation
- A section of true and false questions that require correction if false
- Study your vocabulary notebook as that is not available during the exam.

• It is expected for problems that involve work that those steps are clearly presented. (Take advantage of drawing the representation to get a better understanding of the problem whenever possible)

Probability (Chapter 9)

- Calculate the theoretical probability of an event
- Determine the number of combinations and permutations.
- Determine the probability of an event using Venn diagrams and set notation
- Determine conditional probability.
- Determine the odds in favor or odds against an event
- Use the principles of counting to determine the number of outcomes with and without replacement
- Create a probability tree diagram and use it to list the sample space and the probability of a compound event

Statistics (Chapter 10)

- Identify the appropriate types of graphs for given data sets
- Create box and whisker plots, stem and leaf, and circle graphs for given data sets
- Compute the median, mean, and mode
- Given a measure of central tendency find a missing value
- Interpret stem and leaf and plots, histograms, bar graphs, line graphs, pie charts, and pictographs
- Estimate the equation of a trend line
- Interpret standard deviation and Percentiles for data sets
- Identify ways graphs can be misleading

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Math 304 Review Problems

- 1. True or False, if false correct the statement to make it true (it is expected that you go beyond negating the statement to make it true.)
- a. The probability of selecting a five or a heart from a standard deck of cards is $\frac{17}{52}$
- b. A Garfield Elementary School has 45 first graders, 51 second graders, 48 third graders, 44 fourth graders, and 60 fifth graders. If there are 142 girls at Garfield then the probability that boy is randomly selected from the students at Garfield is $\frac{53}{124}$.
- c. If a data set has a mean of 17 and a median of 17, then it must have a mode of 17 as well.

d. The odds against tossing three coins and getting all heads are 8:1.

- 2. A student asks is it possible to have a standard deviation of 0. How do you respond?
- 3. A jar contains the following marbles: 4 black, 2 white, and 5 red. A pair of marbles are drawn without replacement.
- a. Draw a tree diagram along with the probabilities of each branch to represent this experiment.
- b. What is the probability that the marbles are the same color? b. ______b.

4. Estimate an equation of the trend line pictured. _____



- 5. Use the diagram to the right for problems a b.
- a. P(picking a) =

- b. P(picking a● given your selection is within A) = _____

6. Explain the difference between how to calculate five different colored squares vs 5 squares where three are the same color and the other two different colors.

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